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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/701,430 | 11/29/2000 | Toshio Yamada | WATK:204 | 9774 |

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| EXAMINER | |
|---|---|
| TRAN, HIEN THI | |
| ART UNIT | PAPER NUMBER |
| 1764 | |

DATE MAILED: 02/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/701,430 | YAMADA ET AL. | |
| | Examiner | Art Unit | |
| | Hien Tran | 1764 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *12/7/05*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-5 and 8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5, 8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. The art area applicable to the instant invention is that of catalytic converter.

One of ordinary skill in this art is considered to have at least a B.S. degree, with additional education in the field and at least 5 years practical experience working in the art; is aware of the state of the art as shown by the references of record, to include those cited by applicants and the examiner (*ESSO Research & Engineering V Kahn & Co*, 183 USPQ 582 1974) and who is presumed to know something about the art apart from what references alone teach (*In re Bode*, 193 USPQ 12, (16) CCPA 1977); and who is motivated by economics to depart from the prior art to reduce costs consistent with the desired product characteristics. *In re*

*Clinton* 188 USPQ 365, 367 (CCPA 1976) and *In re Thompson* 192 USPQ 275, 277 (CCPA 1976).

4. Claims 1, 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Locker et al (EP 859,133) in view of Close et al (3,959,865).

Locker et al discloses an apparatus comprising:

a ceramic honeycomb structure 12;

a metal case 16 having two opposing fully open ends; and

a non-intumescent ceramic fiber mat holding member 14 located between the honeycomb structure 12 and the metal case 16 (col. 4, lines 30-34; col. 7, lines 5-19; Figs. 1A, 1B).

The apparatus of Locker et al is substantially the same as that of the instant claim, but fails to disclose whether the ceramic honeycomb structure is fixed beforehand within the metal case, e.g. honeycomb structure not loaded with a catalyst.

However, Close et al discloses that the catalyst may be deposited on the catalyst support before or after being mounted in a casing (col. 5, lines 36-43).

It would have been obvious to one having ordinary skill in the art to alternately mount the ceramic honeycomb structure is fixed beforehand within the metal case as taught by Close et al in the apparatus of Locker et al, on the basis of its suitability for the intended use as a matter of obvious design choice, and since either method is conventional in the art and no cause for patentability in apparatus claims.

With respect to claim 5, Locker et al discloses that the metal case has either stuffing structure or tourniquet structure (see, for example, col. 4, line 41).

5. Claims 2-3, 4, 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Locker et al (EP 859,133) in view of Close et al (3,959,865) as applied to claims 1, 5 above and further in view of Machida et al (5,866,079).

The modified apparatus of Locker et al is substantially the same as that of the instant claim, but is silent as to the specific diameter of the ceramic fibers of the holding materials as claimed in claim 8 and fails to disclose the specific type of the case as claimed in claim 4, and the thickness of the cell walls as claimed in claims 2-3.

However, Machida et al discloses the conventionality of providing a holding material made of non-intumescent ceramic fiber mat, the fiber having diameter of 2-6 μm (col. 75, line 31 to col. 76, line 10), the metal case has either stuffing structure or tourniquet structure and the thickness of the cell walls is from 0.05 to 0.15 mm which encompasses the instant range (col. 42, lines 5-18).

It would have been obvious to one having ordinary skill in the art to select the specific ceramic fiber diameter as taught by Machida et al in the modified apparatus of Locker et al, if not inherent therein, to as to effectively protect the honeycomb structure from damage in a practical use condition.

It would have been obvious to one having ordinary skill in the art to alternate select an appropriate structure for the casing, such as the stuffing structure, as taught by Machida et al in the modified apparatus of Locker et al, on the basis of its suitability for the intended use as a matter of obvious design choice, and since either structure is conventional in the art and no cause for patentability in apparatus claims.

It would have been obvious to one having ordinary skill in the art to substitute the honeycomb structure of Machida et al for the honeycomb structure of Locker et al since the thin wall honeycomb structure would increase the open frontal area and decrease pressure loss as taught by Machida et al.

6. Claims 1-5, 8 are rejected under 35 U.S.C. 103(a) as being unpatentable by Langer et al (WO 98/35144) in view of Close et al (3,959,865) and Machida et al (5,866,079)..

Langer et al discloses an apparatus comprising:

a ceramic honeycomb structure 20 before carrying a catalyst;

a metal case 11; and

a holding material 30 located between the honeycomb structure and the metal case; the holding material comprising non-intumescent ceramic fibers; the thickness of the cell wall being 0.1 mm or less (pages 20-23).

The apparatus of Langer et al is substantially the same as that of the instant claim, but fails to disclose the specific type of casing as claimed.

However, Close et al discloses an apparatus comprising: a ceramic honeycomb structure 20 before carrying a catalyst; a metal case 10 and holding materials 30, 22, located between the honeycomb structure 20 and the metal case 10 (col. 2, lines 18-31; col. 3, lines 16-17, 47-60; col. 5, lines 36-46; col. 6, lines 12-14, Fig. 1).

It would have been obvious to one having ordinary skill in the art to select an appropriate type of casing, such as the one with two opposite fully open ends as taught by Machida et al in the apparatus of Langer et al on the basis of its suitability for the intended use as a matter of obvious design choice and since such a modification would have involved a mere change in the

shape of a component. A change in shape is generally recognized as being within the level of ordinary skill in the art, absence showing any unexpected results. *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

Since Langer et al does not require any priority in coating the catalyst and mounting the carrier, it would have been obvious to one having ordinary skill in the art to deposit the catalyst on the catalyst carrier after mounting the carrier in the casing as taught by Close et al, since both are conventional in the art and no cause for patentability here.

The same comments with respect to the specific type of the holding materials and the specific type of the case structure in Machida et al apply.

***Response to Arguments***

7. Applicant's arguments filed 12/7/05 have been fully considered but they are not persuasive.

Applicants argue that the ceramic substrate of Locker et al will and must contain a catalyst. That may be so, however, the substrate of Locker et al as modified by Close et al, before being coated with a catalyst, meets the instant claims.

Applicants argue that Close et al proposes using a foam and resilient inorganic paper to secure a catalytic support by virtue of foam while Locker et al describes using a non-intumescent mat with a metal case having a specific structure to obtain a secure mounting. Such contention is not persuasive as Close et al is only relied upon for teaching the conventionality of depositing the catalyst on the catalyst support before or after being mounted in a casing (col. 5, lines 36-43).

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on

obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Applicants argue that Langer et al does not discuss a possibility of a system without a loaded catalyst. Such contention is not persuasive since as set forth above, Langer et al does not require any priority between coating the catalyst and mounting the carrier in the casing, e.g. the reference is silent as to whether the carrier may be coated with a catalyst material after installation into the casing. It would have been obvious to one having ordinary skill in the art to deposit the catalyst material on the catalytic carrier after mounting the carrier in the casing as taught by Close et al in the apparatus of Langer et al, since both methods are conventional in the art and no cause for patentability here. The substrate of Langer et al as modified by Close et al before being coated with a catalyst meets the instant claims.

***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hien Tran whose telephone number is (571) 272-1454. The examiner can normally be reached on Tuesday-Friday from 7:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1454. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hien Tran

**Hien Tran**
**Primary Examiner**
**Art Unit 1764**

HT
February 10, 2006